What is claimed is:

1. A motor comprising:

(a) a bracket in which a mounting base for mounting said motor to an apparatus and a bearing housing are unitarily formed;

(b) an oil-impregnated metal fixed to an inner wall of the bearing housing;

(c) a stator in which a stator core wound with a coil is disposed on an outer wall of the bearing housing;

(d) a rotor including a frame which has a plurality of through-holes on a top surface of the frame, a shaft fixed to the frame, and a rotor magnet fixed to the frame; and

(e) a cap facing the through-holes and disposed at a place spaced axially from the through-holes.

2. The motor of claim 1, wherein the bearing housing is a first burring-processed section at a center of said bracket, and the frame has a second burring-processed section at a center of the frame.

3. The motor of claim 1, wherein said cap is press-fitted to an inner wall of the stator core, and an inner diameter of said cap at an end face not press-fitted is smaller than an inner diameter of said cap press-fitted.

4. The motor of claim 1, wherein said cap is press-fitted to an inner wall of the stator core and has radial gap between an outer wall of said oil-impregnated metal and an inner wall of said cap.

5. The motor of claim 1, wherein said cap is made of magnetic

material, and an attracting magnet is disposed outside said cap.

6. The motor of claim 5, wherein said cap is press-fitted to an inner wall of the stator core, and an inner diameter of said cap at an end face not press-fitted is smaller than an inner diameter of said cap press-fitted, and a height of the end face is greater than a height of an end face of the attracting magnet.

7. A motor comprising:

(a) a bracket including a mounting base for mounting said motor to an apparatus;

(b) a bearing housing fixed to said bracket;

(c) an oil-impregnated metal housed in said bearing housing;

(d) a stator in which a stator core wound with a coil is disposed on an outer wall of said bearing housing;

(e) a rotor including a frame which has a plurality of through-holes on a top surface of the frame, a shaft fixed to the frame, and a rotor magnet fixed to the frame; and

(f) an attracting magnet facing the through-holes, spaced axially from the through-holes, and disposed on an upper face of the stator core.

8. The motor of claim 7, wherein the frame has a burring-processed section at a center of the frame.

9. The motor of claim 7, wherein said attracting magnet is a sintered magnet of Neodymium-Iron-Boron system.

10. An apparatus comprising:

a housing; and

a motor mounted within said housing via a mounting base, wherein said motor includes:

(a) a bracket in which the mounting base and a bearing housing are unitarily formed;

(b) an oil-impregnated metal fixed to an inner wall of the bearing housing;

(c) a stator in which a stator core wound with a coil is disposed on an outer wall of the bearing housing;

(d) a rotor including a frame which has a plurality of through-holes on a top surface of the frame, a shaft fixed to the frame, and a rotor magnet fixed to the frame; and

(e) a cap facing the through-holes and disposed at a place spaced axially from the through-holes.

11. The apparatus of claim 10, wherein said cap is made of magnetic material, and an attracting magnet is disposed outside said cap.

12. An apparatus comprising:

a housing; and

a motor mounted within said housing via a mounting base, wherein said motor includes:

(a) a bracket including the mounting base;

(b) a bearing housing fixed to said bracket;

(c) an oil-impregnated metal housed in said bearing housing;

(d) a stator in which a stator core wound with a coil is disposed on an outer wall of said bearing housing;

(e) a rotor including a frame which has a plurality of through-holes on a top surface of the frame, a shaft fixed to the frame, and a rotor magnet fixed to the frame; and

(f) an attracting magnet facing the through-holes, spaced axially from the through-holes, and disposed on an upper face of the stator core.